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TOTAL AMOUNT OF PAYMENT ($) 330.00

Complete if Known	
Application Number	09/607,268
Filing Date	June 30, 2000
First Named Inventor	Tilton
Examiner Name	Staicovici
Group Art Unit	1732
Attorney Docket No.	24808A

METHOD OF PAYMENT

1. [X] The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number: 50-0568

Deposit Account Name: Owens-Corning Fiberglas Technology, Inc.

[X] Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17

[ ] Applicant claims small entity status. See 37 CFR 1.27

2. [ ] **Payment Enclosed:**

[ ] Check [ ] Credit card [ ] Money Order [ ] Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	0.00
106	330	206	165	Design filing fee	0.00
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	0.00
114	160	214	80	Provisional filing fee	0.00

SUBTOTAL (1) ($) 0.00

2. EXTRA CLAIM FEES

	Extra Claims		Fee from below	Fee Paid
Total Claims		-20** =	X 18.00	= 0.00
Independent Claims		- 3** =	X 86.00	= 0.00
Multiple Dependent			0	= 0.00

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	18	203	9	Claims in excess of 20
102	84	202	42	Independent claims in excess of 3
104	280	204	140	Multiple dependent claim, if not paid
109	84	209	42	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0.00

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	0.00
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	0.00
139	130	139	130	Non-English specification	0.00
147	2,520	147	2,520	For filing a request for *ex parte* reexamination	0.00
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	0.00
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	0.00
115	110	215	55	Extension for reply within first month	0.00
116	400	216	200	Extension for reply within second month	0.00
117	920	217	460	Extension for reply within third month	0.00
118	1,440	218	720	Extension for reply within fourth month	0.00
128	1,960	228	980	Extension for reply within fifth month	0.00
119	320	219	160	Notice of Appeal	0.00
120	320	220	160	Filing a brief in support of an appeal	330.00
121	280	221	140	Request for oral hearing	0.00
138	1,510	138	1,510	Petition to institute a public use proceeding	0.00
140	110	240	55	Petition to revive - unavoidable	0.00
141	1,280	241	640	Petition to revive - unintentional	0.00
142	1,280	242	640	Utility issue fee (or reissue)	0.00
143	460	243	230	Design issue fee	0.00
144	620	244	310	Plant issue fee	0.00
122	130	122	130	Petitions to the Commissioner	0.00
123	50	123	50	Processing fee under 37 CFR 1.17(q)	0.00
126	180	126	180	Submission of Information Disclosure Stmt	0.00
581	40	581	40	Recording each patent assignment per property (times number of properties)	0.00
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	0.00
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	0.00
179	740	279	370	Request for Continued Examination (RCE)	0.00
169	900	169	900	Request for expedited examination of a design application	0.00
Other fee (specify)					0.00

*Reduced by Basic Filing Fee Paid **SUBTOTAL (3)** ($) 330.00

SUBMITTED BY				Complete (if applicable)	
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Signature				Date	5 JAN 2004

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24808A

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January 5, 2004

Jan Hostasa

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	:		
	:		
JEFFREY ALLAN TILTON	:		
	:		
Serial No. 09/607,268	:	Group Art Unit:	1732
	:		
Filed: June 30, 2000	:	Examiner:	Stefan Staicovici
	:		
For: **PROCESS FOR FORMING COMPOSITE INSULATOR**	:		

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner of Patents
P.O. Box 1450
Alexandria VA 22313-1450

Dear Sir:

Appeal is taken from the rejection of claims 1-24 and 34 made final in the Office Action mailed on June 3, 2003. A timely Notice of Appeal was filed on October 3, 2003. A one-month extension of time is included with this Appeal Brief. The fee for the extension of time and submitting this Appeal Brief may be debited from Deposit Account 50-0568, along with any other fees required.

I. REAL PARTY IN INTEREST

The sole inventor assigned 100% of his interest in the present invention to Owens-Corning Fiberglas Technology, Inc. ("Appellant"), an Illinois Corporation having a principle place of business at 7734 West 59th Street, Summit, Illinois 60501. The present invention is exclusively licensed to Owens Corning, a Deleware Corporation having a principle place of business at One Owens Corning Parkway, Toledo, OH 43659.

II. RELATED APPEALS AND INTERFERENCES

Appellant knows of no other appeals or interferences which will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 1-24 and 34 remain pending in the application and are the subject of this appeal.

Claims 1-4 and 7-8 are finally rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,591,289 to Souders et al. in view of U.S. Patent No. 4,985,106 to Nelson in further view of U.S. Patent No. 4,131,664 to Flowers et al.

Claims 5 and 6 are finally rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,591,289 to Souders et al. in view of U.S. Patent No. 4,985,106 to Nelson in further view of U.S. Patent No. 4,131,664 to Flowers et al. and U.S. Patent No. 4,418,031 to Doerer et al.

Claims 17-20, 23-24 and 34 are finally rejected under 35 U.S.C. §103(a) as

allegedly being unpatentable over U.S. Patent No. 5,591,289 to Souders et al. in view of U.S. Patent No. 4,985,106 to Nelson in further view of U.S. Patent No. 4,131,664 to Flowers et al. and U.S. Patent No. 5,366,678 to Nozimo et al.

Claims 21 and 22 are finally rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,591,289 to Souders et al. in view of U.S. Patent No. 4,985,106 to Nelson in further view of U.S. Patent No. 4,131,664 to Flowers et al. and U.S. Patent No. 4,418,031 to Doerer et al.

Claims 9-13 and 16 are finally rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,976,295 to Ang in view of U.S. Patent No. 4,985,106 to Nelson in further view of U.S. Patent No. 4,131,664 to Flowers et al.

Claim 14 is finally rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,976,295 to Ang in view of U.S. Patent No. 4,985,106 to Nelson in further view of U.S. Patent No. 4,131,664 to Flowers et al. and U.S. Patent No. 4,418,031 to Doerer et al.

IV. STATUS OF AMENDMENTS

The form of the claims for purposes of this appeal is as presented in the Amendment document filed on June 12, 2002 (Paper No. 7) and subsequently entered. For the convenience of the Board, a copy of the claims is included in an appendix forming the final section of this Appeal Brief.

V. SUMMARY OF THE INVENTION

The present invention pertains to a process for forming a composite insulator 10. In its broadest terms, the process comprises the step of forming an insulator precursor 24 by orienting an insulation insert 16 in a desired location between a first facing layer 12 and a layer of a polymer based blanket material 14 (see p. 12, line 25 to p. 12, line 1). The precursor 24 is closed in a molding press 26 and heated to a temperature sufficiently high to soften polymer binding fibers in the layer of polymer based blanket material 14 and cause reshaping (p. 12 generally). The precursor 24 is then cooled so as to set it in its molded shape, thus completing formation of the insulator 10 (p. 13, lines 6-11). The insulator 10 is then removed by opening the molding press 26 (p. 13, lines 12-13).

In one particular embodiment, the process described above further comprises cutting the first facing layer 12, the layer of polymer based blanket material 14 and the insulation insert 16 to desired dimensions prior to the step of forming the precursor 24 (p. 12, lines 4-5). This step may result in a cost savings, since waste is reduced by cutting the materials beforehand. It also is beneficial in that it makes it easier to open and close the molding press, as well as to remove the molded article.

Preferably, the heating of the precursor 24 is to a temperature of between 200-400°F and, most preferably, between 300-375°F (p. 6, lines 21-24). Furthermore, pressure may be applied to the molding press 26 at a level of between approximately 0.5-100.0 psi for between substantially 5-45 seconds (p. 12, lines 23-24). This compresses the insulator

precursor 24 approximately 10-95% (p. 6, line 27 to p. 7, line 1). The step of orienting a second facing layer 18 with the insulation insert 16, the first facing layer 12 and the layer of polymer based blanket material 14 may also be practiced when forming the insulator precursor 24 according to the process of claim 1 (p. 13, line 21).

In accordance with a second aspect of the invention, a process for forming a multilayer composite insulator 10 is provided. The process comprises forming an insulator precursor 24 by orienting an insulation insert 16 in a desired location between a first facing layer 12 and a layer of a polymer based blanket material 14 (p. 13, lines 18-27). The insulator precursor 24 is preheated to a temperature sufficiently high to soften polymer binding fibers in the layer of polymer based blanket material (p. 14, lines 1-7). Then, the preheated insulator precursor 24 is transferred to a molding press 26 while the polymer binding fibers of the polymer based blanket material layer 14 remain softened (p. 14, lines 8-11). The precursor 24 is then closed in a molding press 26 and cooled to set it in its molded shape, thus completing the formation of the insulator 10 (p. 13, lines 6-9). The insulator 10 is then removed from the open molding press 26 (p. 13, lines 11-12).

In one embodiment, the process forming this second aspect of the invention includes cutting the first facing layer 12, the layer of polymer based blanket material 14, and the insulation insert 16 to desired dimensions prior to the forming step (p. 13, lines 21-23). Preferably, the preheating is to a temperature between approximately 220-425°F, and most preferably to a temperature between approximately 300-375°F (p. 14, lines 1-5).

This process may include applying pressure to the insulator precursor 24 in the molding press at a level between approximately 0.5-100.0 psi for between substantially 5-45 seconds (p. 12, lines 23-24). The compressing is approximately 10-95% when applying pressure (p. 5, lines 23-24). Orienting a second facing layer 18 with the insulation insert, the first facing layer 12 and the layer of polymer based blanket material 14 when forming the insulator precursor 29 may also be done (p. 13, lines 19-21).

In accordance with a third aspect of the invention, a process for forming a multilayer composite insulator 10 is provided. The process comprises the step of forming an insulator precursor 24 by orienting an insulation insert 16 in a desired location between a first facing layer 12 and a layer of polymer based blanket material 14 (p. 15). The precursor 24 is closed in a molding press 26 with crimping at least one selected area (p. 16, lines 5-10). The precursor 24 is heated in the press 26 to a temperature sufficiently high to soften only the polymer binding fibers in said at least one selected area of the layer of polymer based blanket material 14 (p. 6, lines 8-11). The molding press 26 is then opened, and the insulator 10 removed (p. 15, lines 11-13). As a result of this process, the insulator 10 includes at least one selected area characterized by relatively high density and relatively increased rigidity (p. 17, lines 8-9).

In one embodiment, the process further includes the step of cutting the first facing layer 12, the layer of polymer based blanket material 14 and the insulation insert 16 to desired dimensions prior to forming (p. 13, lines 21-23). Preferably, the heating of the

insulator precursor 24 is to between 200-400°F and most preferably to between 300-375°F (p. 6, lines 21-24). The process may include applying pressure to the insulator precursor in the molding press at a level between approximately 0.5-100.0 psi for between substantially 5-45 seconds. (p. 12, lines 23-24). The process may further include orienting a second facing layer 18 with the insulation insert 16, the first facing layer 12 and the layer of polymer based blanket material 14 when forming the insulator precursor 24 (p. 13, line 21).

In accordance with a fourth aspect of the invention, a process for forming a multilayer composite insulator 10 is disclosed. The process comprises forming an insulator precursor 24 by orienting an insulation insert 10 in a desired location between a first facing layer 12 and a layer of a polymer based blanket material 14 including polymer binding fibers (p. 15, lines 23-27). The precursor 24 is then molded into a desired shape by: (1) heating the insulator precursor 24; (2) applying pressure to the insulator precursor 24; (3) softening only those polymer binding fibers present in at least one selected area of the polymer based blanket material 14; and (4) crimping the at least one selected area pp. 15-16).

VI. THE ISSUES

The Board must determine whether claims 1-24 and 34 are directed to obvious subject matter under 35 U.S.C. §103(a) over the various combinations of references cited by the Examiner.

VII. GROUPING OF CLAIMS

Independent claim 1 and dependent claims 2-4 and 7-8 stand or fall together. Dependent claims 5 and 6 stand alone. Independent claim 9 and dependent claims 10-13 stand or fall together. Dependent claims 14-16 stand alone. Independent claim 17 and dependent claims 18-20 and 23-24 stand or fall together. Dependent claims 21 and 22 stand alone. Finally, independent claim 34 stands alone.

VIII. ARGUMENT

Turning first to claim 1, it recites a process that very clearly patentably distinguishes over U.S. Patent 5,591,289 to Souders et al. when considered in combination with U.S. Patent 4,985,106 to Nelson. The Souders et al. patent relates to the production of an automobile headliner by means of a compression molding process. However, it clearly does not teach the step of "forming an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material" as set forth in claim 1. In fact, an insulation insert is not provided in the Souders et al. headliner, nor does it explicitly teach the step of cooling the headliner in the molding press to set its molded shape, as claimed. Rather, this patent explicitly teaches removing the assembly from the press and placing it in a fixture that acts as a cooling fixture and a trim nest (see column 6, lines 27-30). Thus, it actually teaches away from the invention of claim 1 by teaching the desirability of cooling the assembly outside the mold.

With regard to the secondary reference to Nelson, it very clearly fails to provide the teachings missing from the Souders et al. patent that would allow the combination of these two references alone to form an appropriate basis for the rejection of claim 1 on obviousness grounds. More specifically, the Nelson patent strictly relates to an insulator having a flat panel construction and, thus, provides no relevant teaching relating to molding operations. Stated another way, the Nelson patent does not teach the concept of molding an insulator into a desired shape, nor does it suggest that such molding could be done while maintaining the insert in a desired or selected position within the product. Thus, nothing in the Souders et al. and Nelson references would suggest combining their teachings in the manner proposed by the Examiner and arrive at the invention of claim 1.

During prosecution, the Examiner implicitly seemed to agree with the proposition advanced in the foregoing paragraph, as evinced by the abandonment of the original rejection of claim 1 on obviousness grounds founded on the "two-way" combination of these references. Instead of then simply acknowledging the lack of any suggestion to combine these references and recognizing the non-obvious nature of the invention of claim 1, an additional "new" reference, U.S. Patent No. 4,131,664 to Flowers et al. was added to make a more tenuous three-way obviousness rejection. However, as outlined in detail in the discussion that follows, this newly cited Flowers et al. patent does not provide, and the Examiner does not otherwise supply, the requisite "objective evidence" of a suggestion to combine its teachings with those of either the Nelson or Souders et al.

patents (or that would lead one to combine these two references in the first instance) and arrive at the invention of claim 1. Therefore, a *prima facie* case of obviousness is lacking, and the rejection of this claim based on this specious combination of references cannot stand.

Appellant does not contest the Examiner's finding that the Flowers et al. patent discloses providing a "mold" having "heating/cooling channels." Appellant also acknowledges that one embodiment of an acoustic panel disclosed in the Flowers et al. patent includes a film layer 64, and further mentions that this layer may be applied at "localized positions" within the panel. However, this reference must do more than simply disclose bits and pieces of the claimed invention that can be combined with others in the prior art. Rather, as is well-established in the law, this reference or some other form of objective evidence must actually provide a suggestion or motivation to combine its teachings with those of the other references cited. Otherwise, the *prima facie* case of obviousness is lacking.

The decision of *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) is instructive in this regard. In *Fritch*, the Federal Circuit overturned an Examiner's determination regarding the obviousness of a claimed invention. In the course of doing so, it explained that:

> [o]bviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can

> be combined only if there is some suggestion or incentive to do so. . . . ***The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.***

Id. at 1784 (emphasis added). The highlighted point was further emphasized in the more recent decision of *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002), in which the court emphasized the need for "objective evidence" of a motivation or suggestion to combine two references, as opposed to subjective speculation by the Examiner.

Here, the Examiner recites two unrelated and highly speculative bases for combining the three cited patents in the manner proposed. The first basis is that "Nelson ('106) specifically teaches that . . . [an insulation] insert provides for improved vibration dampening, hence providing for an improved fibrous automobile headliner as taught by Souders et al." As summarized above and set forth in great detail in the document filed in response to the first Office Action, the mention in the Nelson patent of the desirability of providing an insulator with improved noise, vibration, and heat insulating capabilities does not "objectively" suggest the desirability of using the insert with the headliner disclosed in the Souders et al. patent. Stated another way, all the Nelson et al. patent teaches or suggests is using an insert in several specific types of insulators, none of which correspond to one formed by the process set forth in claim 1.

With respect to this last assertion, the Examiner challenges it by citing to Section 2113 of the Manual of Patent Examining Procedure for the proposition that the

patentability of "product-by-process" claims is predicated on the product itself. It is respectfully submitted that the present claims are not "product-by-process" claims, so the section relied upon in inapposite. Moreover, it is axiomatic that the structures recited in process claims, including an end product such as an insulator formed by a novel process like the one set forth in claim 1, can indeed be relied upon in support of patentability. *See Ex Parte Porter*, 25 USPQ2d 1144 (Bd. Pat. App. & Int. 1992) (holding a method claim patentable for reciting the step of "utilizing" a particular type of nozzle, when the structures of the nozzle were admittedly the only limitations in the claim at issue.).[1]

Furthermore, nothing in the Souders et al. patent is cited as "teaching or suggesting" the desirability of using an insert of the type disclosed in the Nelson patent for use in a completely different type of insert (and this combination is actually contraindicated, since the theme of the Souders et al. patent is making the headliner as simple in construction and inexpensive as possible; see, e.g., col. 2, lines 15-19). Simply put, no "objective" evidence of record supports the conclusion that a skilled artisan would

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[1] An equally compelling example is found in *Ex Parte O'Leary*, Appeal No. 94-2333 (Bd. Pat. App. & Int. 1995), in which the method claims at issue were held to be patentable based on the structural limitations recited, with the Board expressly relying on *Ex Parte Porter, supra,* to reject the Examiner's contrary assertion. Specifically, the Examiner's Answer filed in response to O'Leary's Appeal Brief contended that structures recited in a claim "should not be given any patentable weight since this is a method claim and this portion of the claim was directed solely to structural limitations." *Id.*, p. 4. The Board disagreed, citing *Ex Parte Porter, supra*, for the proposition that "the particular structural features . . . formed an integral part of the claimed method . . ., and had to be evaluated in considering the patentability of the claim."

be motivated to combine the teachings of these two references. Rather, a speculative, subjective determination is made using hindsight based on the teachings of Appellant's specification that, had one wanted to "improve" the headliner disclosed in the Souders et al. patent to noise, vibration, and heat, then the obvious choice is to use the insert of the type shown in the Nelson et al. patent in the process as claimed. This leap of logic is simply unsupported by the evidence of record, which means that the obviousness rejection of claim 1 simply cannot stand on this basis alone.

The second, seemingly unrelated basis as to why a skilled artisan would be motivated to combine the teachings of the Flowers et al. patent with the other two references (which themselves are not properly combinable) is the contention that:

> it would have been obvious for one of ordinary skill in the art to have provided a mold having cooling channels as taught by Flowers *et al.* ('664) to cool the resulting molded structure I [*sic* in] the mold in the process of Souders *et al.* ('289) . . . due to a variety of advantages such as, reduced costs by not having an additional cooling station, simplicity of mold design, etc.
>
> [Thus,] in view of the teachings of Flowers *et al.* ('664) that an insulating insert is applied at localized positions, it would have been obvious for one of ordinary skill in the art to have included an insulation insert as taught by Nelson ('106) in the laminated assembly obtained by the process of Souders *et al.* ('289), because Nelson ('106) specifically teaches that such an insert provides for improved vibration dampening, whereas Flowers *et al.* ('664) [teaches] that an insulating insert is applied at localized positions depending on the desired characteristics of the resulting molded article.

All these statements establish is that "parts" of the claimed invention are found in three different prior art references. They are wholly devoid of reference to any objective

evidence that would suggest making this three-way combination to a skilled artisan.

To be sure, the secondary Nelson patent is not properly combinable with the primary Souders et al. patent for several reasons, including the fact that it does not disclose, teach, or suggest "molding an insulator," let alone to cause reshaping thereof. In his argument, the Examiner cites to nothing in the Nelson patent or otherwise that would motivate one of ordinary skill in the art to use such an insert in a molded insulator of the type disclosed in the Flowers et al. patent. While the Flowers et al. patent discloses providing a film layer at selected locations in an acoustic panel, nothing therein suggests combining its teachings with those of the Nelson patent, which again does not disclose an insulator molded to cause reshaping (and teaches that a separate cooling fixture is provided, which countervails the Examiner's theory that an advantage provided by the combination is "reduces costs by not having an additional cooling station . . . .").

While the Souders et al. and Flowers et al. patents both admittedly disclose molded insulators, neither suggests the step of "forming an insulation precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material" and then heating the insulator precursor to soften the polymer binding fibers in the layer of polymer based blanket material, as required in claim 1. Although the Flowers et al. patent discloses providing channels in a platen capable of receiving cooling fluid, the Examiner's contention that it would have been obvious to use such channels in the mold disclosed in the Souder et al. patent ignores the fact that: (1) the

claim expressly requires "cooling said insulator precursor in said molding press so as to set said insulator precursor in its molded shape," which is contraindicated in this patent; and (2) neither secondary reference cited teaches performing this step on a molded insulator precursor having an insulation insert.

As explained briefly above, the Souders et al. patent explicitly teaches removing the assembly from the press and placing it in a fixture that acts as a cooling fixture and a trim nest (see column 6, lines 27-30). Since cooling is performed outside the mold in the Souders et al. reference, the modifying of the Souders et al. mold to include channels for cooling fluid is not suggested nor is there any basis in the reference to contemplate such a modification. The teaching is one of hindsight, taught solely in the present application. As such, there is no proper basis for the presently proposed rejection.

In fact, the Souders et al. patent actually teaches away from the present invention as set forth in claim 1. Rather than providing the explicit teaching or suggestion that would lead a skilled artisan to decide to modify the arrangement in the Souders et al. patent to cool an insulator precursor in a mold until it sets, the Flowers et al. patent does not expressly teach cooling an insulator precursor having an insert in a desired location between a facing and a blanket in a molding press so as to set it in its molded shape. The rejection ostensibly assumes that this is the case, since the patent discloses providing heating and cooling channels in the mold platens. However, the only embodiment discussed with reference to supplying cooling fluid to the channels to cool a molded

article (see col. 11, line 36 to col. 12, line 2) is one that does not include the film layer 64, or otherwise mention providing an insulation insert in a desired location, as claimed. Hence, the reference relied upon teaches bits and pieces of the invention, but itself does not expressly teach or suggest the combination of the "forming" and "cooling" steps as claimed. Since the Souders et al. patent teaches away from "cooling" in the manner required by the claim and otherwise does not teach the "forming" step including an insulation insert, and the Nelson patent does not teach forming or cooling in the manner claimed, no objective basis exists on which to conclude that a skilled artisan would be motivated to combine the teachings of these three patents and arrive at the invention of claim 1.

The Examiner cites to Section 2112 of the Manual of Patent Examining Procedure in support of the position that it is inherent in the Souders et al. patent that the insulator including the insert would be cooled and set "in the mold." However, this Board has observed the truism that "[i]nherency and obviousness are somewhat like oil and water – they do not mix well." *Ex parte Schricker*, 56 USPQ2d 1723 (Bd. Pat. App. & Int. 2000) (unpublished). Although not binding precedent, the Board in that decision further required that "when an examiner relies on inherency, it is incumbent on the examiner to point to the 'page and line' of the prior art which justifies an inherency theory."

Here, the Examiner merely points to a passage in a first reference (the Flowers et al. patent) that mentions mold-cooling an acoustical panel unlike the one being claimed, a

passage in a second reference (the Souder et al. patent) that mentions an insulator without an insert like the one claimed, and a passage in a third reference (the Nelson patent) disclosing an insulator with an insert, but formed using a completely different technique (i.e., without heating and cooling). What is lacking from any of these references or the record in general is some "objective evidence" of a suggestion to combine their singular teachings and arrive at the invention of claim 1, or anything explaining why mold cooling until the precursor is set and "complete formation" results would "necessarily flow" from the fact that the headliner assumes a "self-supporting strength" "while the headliner is in between the mold dies (58, 60)" (which is plainly not taught or suggested in the Souders et al. patent).

Indeed, in view of the crowded nature of the insulator art, it is no surprise that the Examiner is easily able to find all the elements of the claimed invention in different prior art references, since "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983). However, very few patents would ever issue if a simple showing of the various elements in the prior art was sufficient to negate patentability. This is precisely why the law requires the objective evidence of a suggestion of combining the teachings of the references, and, as demonstrated in the *Fritch* decision, *supra* and its progeny, the requirement is not taken lightly. *See In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999) ("the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a

showing of the teaching or motivation to combine prior art references."). Accordingly, absent some objective evidence of a "teaching or motivation" in one of the cited patents or otherwise of forming a multilayer composite insulator using the process set forth in claim 1, the obviousness rejection is improper and should be reversed.

In the final Office Action, the contention is made that the foregoing analysis amounts to attempting to "show nonobviousness by attacking the references individually where the rejections are based on obviousness." Appellant respectfully disagrees. In addition to explaining in detail why the individual references are deficient, the reasons that the combination of them is improper or unsupported were provided. Such reasoning is also thoroughly provided in this Appeal Brief in compliance with 37 C.F.R. Section 1.192(c)(8)(iv).

The cases cited by the Examiner as establishing an alleged deficiency in Appellant's past arguments are inapposite. In *In re Keller*, 642 F.2d 413 (CCPA 1981), the applicant presented an Affidavit attacking only one of three references cited in making an obviousness rejection. Not surprisingly, the Board held that merely attacking one of the three references was insufficient to overcome the rejection. *In re Merck & Co.*, 800 F.2d 1091, 1098 (Fed. Cir. 1986) also presented a situation where the applicant asserted that only one of the references teaches away from the claimed invention, seemingly without concern for the other references. Noteworthy is the fact that these cases in no way supplant the requirement for objective evidence of a teaching or suggestion to make a combination of references, which is the primary ground of attack made by the Appellant

(which, of course, in no way bears the burden of making the case for obviousness).

The Examiner also notes that the "test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference." Appellant has never contended otherwise. Indeed, it is in full agreement with the Examiner that "the test [of obviousness is what the combined teachings of . . . [the] references would have suggested to those of ordinary skill in the art." *In re Keller, supra.* The difference of opinion comes from the fact that this test is not met here, since the combined teachings of the cited references would not have led a skilled artisan to the invention of claim 1 absent the use of hindsight and the knowledge and teachings of the present invention.

Dependent claims 2-8 are equally allowable for the same reasons as claim 1. Further, several of these claims include additional limitations that support their allowability. For example, claims 5 and 6 refer to applying pressure to the insulator precursor in the molding press at a level of between approximately 0.5-100.0 psi for between substantially 5-45 seconds. Citation is made to U.S. Patent No. 4,418,031 to Doerer et al. in combination with the three references discussed above to support an extraordinary four-way obviousness rejection. However, as emphasized in response to the first Office Action, the Doerer et al. patent explicitly teaches molding at temperatures of about 325EF to 590EF at a pressure of about 200-1000 psi for a mold cycle time of as little as one minute or less. The Doerer et al. patent then goes on to state that the temperature, pressure and time cycle required may be varied depending on the final

product requirements. In distinguishing over this reference, Appellant contended that this "varying" of temperature, pressure and time must be read in the context of the ranges explicitly set forth in the Doerer et al. reference (see particularly column 5 lines 42-47), and emphasized that claim 5 of the present application refers to the applying of pressure at a level of between approximately 0.5-100.0 psi, which is from 2 to 2000 times less than that explicitly taught in the Doerer et al. reference while cycle times of less than a minute (between 5-45 seconds) are claimed.

In making final the rejection of claims 5 and 6, the Examiner continues to assert that the "molding temperature, pressure and time are result-effective variables," and cites to the decision of *In re Antoine*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) as supporting the conclusion that this *per se* means that the recited inventions are obvious. Rather than support the broad contention made, the *Antoine* decision actually stands for the proposition that result-effective variables where the results are unexpectedly good are exceptions to the rule that the discovery of an optimum value of a variable in a known process is normally obvious. *Id.* at 8 ("In *In re Aller*, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1955), the court set out the rule that the discovery of an optimum value of a variable in a known process is normally obvious. We have found exceptions to this rule in cases where the results of optimizing a variable, which was known to be result effective, were unexpectedly good.") (emphasis added). Here, Appellant has provided a convincing line of reasoning as to why the results of using the claimed time and pressure ranges are unexpectedly good: a highly absorptive insulator is produced in a similar or faster time at

reduced pressures than those disclosed in the prior art to produce the expected results. This distinction should not be ignored.

The fact that the holding of *In re Antoine* specifically relates to the optimization of a variable in a known process is also overlooked. In stark contrast to that factual situation, Appellant's claimed process is unknown in the art, as proven by the Examiner's inability to "find" it only by making a specious combination of four references. In other words, unlike the applicant in *In re Antoine* who was merely claiming modifying an admittedly well-known process by changing a variable to a particular number (which it is important to note was held patentable nonetheless), Appellant is claiming a novel, non-obvious process, which includes, as per claims 5 and 6, the step of "applying" pressure within a particular range for a particular time. The present invention as set forth in dependent claims 5 and 6, therefore, represents a distinct improvement over the cited art and provides benefits in reduced production costs long sought by inventors in this field of endeavor. If it had been obvious to the inventors of the Doerer et al. patent that the product could be produced at these reduced pressures within the same or shorter time frame, it certainly would have disclosed the presently claimed processing parameters in compliance with the "best mode" requirement. Instead, the cited patent explicitly discloses different parameters, and no indication is made as to how the presently claimed parameters would be obvious in light thereof.

It should also be appreciated that the magnitude of the difference in the applied pressure is also not within the realm of simple experimentation. Specifically, the

presently claimed processing pressures of 0.5-100 psi are between 2 and 2000 times less than the processing parameters of 200-1000 psi set forth in the Doerer et al. patent. The fact of the matter is the Doerer et al. patent actually teaches away from the present invention.

Moving on, claims 9-13 and 16 very clearly patentably distinguish over U.S. Patent No. 5,976,295 to Ang when considered in combination with the Nelson and Flowers et al. patents. Acknowledgment is made that the Ang patent does not teach the step of forming an insulator precursor by orienting an insulation insert in the desired location between a first facing layer and a layer of a polymer based blanket material. The Nelson patent does teach the concept of providing an insulation insert between layers of an insulation panel, but clearly does not teach preheating all those layers together prior to delivery into a mold. In an effort to supply the necessary missing teachings, the Examiner cites to the Flowers et al. patent as disclosing a film layer that may be selectively positioned in an acoustic panel. However, the manner in which this third reference possibly discloses, teaches, or suggests the claimed preheating and transferring steps missing from the other cited references is not explained.

Moreover, the portion of the Ang patent the Examiner relies upon as allegedly disclosing the "preheating" and "transferring" steps merely mentions the use of a convection oven, and in no way discloses the combined steps of: (1) preheating an insulator precursor to a temperature sufficiently high to soften polymer binding fibers in a layer of polymer based blanket material; and (2) transferring the preheated insulator

precursor to a molding press while the polymer binding fibers of the layer of polymer based blanket material remain softened. The Examiner posits that the case is otherwise by stating that the heating of the charge in the oven is "such that thermoplastic fibers of fibrous mat (14) soften and bond with other fibers with said fibrous mat (14)," citing to column 3, lines 53-56 and col. 4, lines 23-30 of the Ang patent. The first passage states that the "mixed fiber padding" 14 may be comprised of fibers 16, 18 having:

> different melt temperatures so that the higher temperature melt fibers 16 can be used primarily as resilient filling while the low temperature melt of bicomponent fibers can be used as filling and as a binder to join fibers and the components of the headliner together . . . .

The second passage states that:

> Fibers 16 have a higher temperature melting point as compared with the bicomponent fibers 18. The fibers 18 incorporate a PET copolymer which has a lower melting point temperature as compared to the fibers 16. This provides a thermoplastics adhesive or bond when the pad is heated to a temperature in the range of 160-200E C. Accordingly, when the charge is heated into the predescribed temperature range and formed under pressure in the mold 26, the bicomponent polyester fibers bond at their contact points with one another and with fibers 16.

As should be understood from the foregoing, this patent does not in any way teach the step of preheating an insulator with transferring to the mold with the fibers remaining in a softened state, as is expressly required in this claim, and the Examiner fails to identify such a teaching in any other of the cited patents (and indeed seemingly ignores this requirement of the claim) or explain why the same would be inherent. Accordingly, since all limitations of claim 9 are not taught or suggested in the cited combination of references, a *prima facie* case of obviousness is lacking.

Claim 14 also depends from claim 9 and includes the additional limitation of applying pressure to the insulator precursor for between substantially 5-45 seconds. In rejecting claim 14, the Examiner cites not only the Ang and Nelson patents discussed above, but also both the Doerer et al. and Flowers et al. patents. Neither the Doerer et al. or Flowers et al. patents address the shortcomings noted above with respect to the Ang and Nelson patents as they relate to independent claim 9. Specifically, the Doerer et al. patent relates to a molding process wherein the mat is not preheated and then transferred to a mold. Instead, the entire heating of the mat takes place within the mold (see column 5, ll. 40-57). The Flowers et al. patent does not teach the "forming," "preheating," and "transferring" steps, and the Examiner does not assert otherwise. Accordingly, claim 14 clearly patentably distinguishes over the cited art and should be allowed.

The same logic applies to claims 15 and 16, which also depend from claim 9. As noted above, the Ang patent does not teach the transferring step of this claim. The secondary references to Nelson, Souders et al., and Flowers et al. provide no teaching to overcome this shortcoming of the Ang patent and, therefore, when combined with the Ang patent provide no basis for the proper rejection of these claims. While the Souders et al. patent teaches passing the batting blank 32 of the eventual headliner product through an oven 44 prior to molding, the steps of: (1) forming an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material, (2) preheating the insulator precursor to a temperature sufficiently high to soften the polymer binding fiber in that blanket material; and (3) transferring the

preheated insulator precursor to a molding press while the fibers remain soft are clearly not taught. Moreover, the contention that the references are properly combinable because all "teach similar end-product, material and processes" is insufficient objective evidence of a suggestion or motivation to warrant combining them. Accordingly, the patentability of these claims is clearly established.

Turning to claim 17, the Examiner makes another four-way obviousness rejection final, citing the Souders et al. patent as the primary reference with the Nelson, Flowers et al. and Nozimo et al. patents as secondary references. The primary reference, the Souders et al. patent, does not teach or suggest the forming of an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material as set forth in claim 17. Further, it does not teach or suggest the closing of the insulator precursor in a molding press and the crimping of the at least one selected area of the insulation precursor such that the polymer binding fibers in that at least one selected area are the only polymer binding fibers heated sufficiently to soften during the molding process.

None of the secondary references cited against this claim fully address the shortcomings of the primary reference. As noted above, the Nelson patent does disclose an insulation panel having an insulation insert in a desired location, but does not teach or suggest that this panel is subsequently molded into any desired shape as set forth in claim 17. Moreover, it does not in any way teach or suggest that this would be possible while maintaining the insert in the desired position within the insulator precursor.

The Flowers et al. patent discloses one embodiment of an acoustic panel having a film layer 64 and notes that this layer may be "localized" within the panel. However, the reference does not disclose, teach, or even remotely suggest the closing of the insulator precursor in a molding press where the polymer binding fibers in at least one selected area are the only polymer binding fibers heated sufficiently to soften during the molding process. Thus, other than disclosing that acoustic panels may be molded, it is no more relevant to the invention of claim 17 than the Nelson patent.

U.S. Patent No. 5,366,678 to Nomizo et al. is cited for its disclosure of a compression molding process wherein a thermofusible fibrous blank is inserted into the mold and heat and pressure are applied to a specific region so that the region melts and hardness and density are increased in the region. The Board should appreciate that the Nomizo et al. patent relates to the production of cushioning material for seat pads requiring processing times of 60 to 80 minutes or more (see Example 1). As such, the teachings of the Nomizo et al. patent are not particularly relevant to the production of insulation materials where speed of production and cycle times are critical to produce a commercial product at a reasonable cost. It should also be appreciated that the Nomizo et al. patent does not teach in any respect the orienting of an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material. If the desired end product is a seat cushion, including a localized insulation insert would certainly not render the end product well-suited for its intended purpose, and no explanation is given as to why a skilled artisan would possibly want to use such an insert

in between a facing layer and the cushion disclosed in the Nozimo et al. patent (when "improved comfort" is the stated goal (see col. 1, ll. 14-15)). It is therefore clear that claim 17 patentably distinguishes over the cited prior art of record. This is also true of claims 18-20, 23 and 24 which depend from claim 17 and were rejected on the same grounds.

Claims 21 and 22 depend from claim 17 and recite, respectively, the steps of applying pressure to the precursor at a level of between approximately 0.5-100.0 psi and compressing the precursor for substantially 5-45 seconds. Such processing parameters in combination with the steps of claim 17 (again, an "unknown" process) are neither taught nor suggested in the Souders et al., Nelson, Flowers et al., and Nomizo patents, whether taken alone or in combination.

Recognizing this failing, the Examiner cites the Doerer et al. patent. However, as noted above, it teaches applying a pressure of approximately 200-1000 psi during processing, which is from 2 to 2000 times greater than the pressure range set forth in claim 21. Accordingly, whether considered singularly or in combination, the Souders et al., Nelson, Flowers et al., Nomizo et al. and Doerer et al. patents fail to provide an appropriate basis for rejection of claims 21 and 22 under 35 U.S.C. § 103. Accordingly, the rejection of these claims should be reversed.

Independent claim 34 is also rejected over the combination of the Souders et al, Nelson, Flowers et al. and Nozimo et al. patents. The primary reference to the Souders et al. patent does not teach or suggest: (1) forming an insulator precursor by orienting an

insulation insert in a desired location between a first facing layer and a layer of a polymer based blanket material including polymer binding fibers; and (2) molding said insulator precursor into a desired shape by (a) heating said insulator precursor; (b) applying pressure to said insulator precursor; (c) softening only those polymer binding fibers present in at least one selected area of said polymer based blanket material; and (d) crimping said at least one selected area.

None of the secondary references cited by the Examiner fully address the shortcomings of the primary reference. As noted above, the Nelson patent does disclose an insulation panel having an insulation insert in a desired location, but does not disclose that this panel is subsequently molded into any desired shape as set forth in claim 34, nor does it in any way teach or suggest that this would be possible while maintaining the insert in the desired position within the insulator precursor.

The Flowers et al. patent discloses an embodiment of an acoustic panel that may include a film layer 64, and notes that it may be selectively positioned. However, it does not disclose, teach, or even remotely suggest the closing of the insulator precursor in a molding press and the crimping of the at least one selected area of the insulation precursor where the polymer binding fibers in that at least one selected area are the only polymer binding fibers heated sufficiently to soften during the molding process. Thus, other than disclosing that panels may be molded, it is no more relevant to the invention of claim 34 than the Nelson patent.

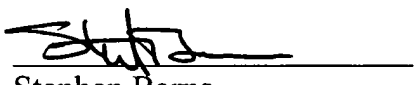
Finally, the Nomizo et al. patent does not teach in any respect the orienting of an

insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material. No explanation is provided as to why a skilled artisan would possibly use the technique disclosed in this patent in conjunction with the manufacture of a headliner having an insulation insert, as is claimed. It is therefore clear that claim 34 patentably distinguishes over the cited prior art of record.

In summary, Appellant has addressed and met every rejection set forth in the final Office Action and asseverates that all of the rejected claims meet the statutory requirements for patentability. Thus, it is respectfully requested that all outstanding rejections be reversed and that the present application be remanded to the Examiner with instructions for immediate allowance.

Respectfully submitted,

OWENS CORNING



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IX. APPENDIX

The claims on Appeal read as follows:

1. A process for forming a multilayer composite insulator, comprising:

forming an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of a polymer based blanket material;

closing said insulator precursor in a molding press;

heating said insulator precursor in said molding press to a temperature sufficiently high to soften polymer binding fiber in said layer of polymer based blanket material and cause reshaping;

cooling said insulator precursor in said molding press so as to set said insulator precursor in its molded shape and complete formation of said insulator; and

opening said molding press and removing said insulator.

2. The process of Claim 1 further including cutting said first facing layer, said layer of polymer based blanket material and said insulation insert to desired dimensions prior to forming.

3. The process of Claim 1, wherein said heating of said insulator precursor is to between 200-400°F.

4. The process of Claim 1, wherein said heating of said insulator precursor is to between 300-375°F.

5. The process of Claim 1, including applying pressure to said insulator precursor in said molding press at a level between approximately 0.5-100.0 psi.

6. The process of Claim 5, wherein said pressure is applied for between substantially 5-45 seconds.

7. The process of Claim 5, including compressing said insulator precursor between approximately 10-95% when applying pressure.

8. The process of Claim 1, including orienting a second facing layer with said insulation insert, said first facing layer and said layer of polymer based blanket material when forming said insulator precursor.

9. A process for forming a multilayer composite insulator, comprising:

forming an insulator precursor by orienting an insulation insert in a desired location

between a first facing layer and a layer of a polymer based blanket material;

preheating said insulator precursor to a temperature sufficiently high to soften polymer binding fiber in said layer of polymer based blanket material;

transferring said preheated insulator precursor to a molding press while said polymer binding fibers of said layer of polymer based blanket material remain softened;

closing said insulator precursor in a molding press;

cooling said insulator precursor on said molding press so as to set said insulator precursor in its molded shape and complete formation of said insulator; and

opening said molding press and removing said insulator.

10. The process of Claim 9 further including cutting said first facing layer, said layer of polymer based blanket material and said insulation insert to desired dimensions prior to forming.

11. The process of Claim 9, including preheating said insulator precursor to a temperature between approximately 220-425°F.

12. The process of Claim 9, including preheating said insulator precursor to a temperature between approximately 300-375°F.

13. The process of Claim 9, including applying pressure to said insulator

precursor in said molding press at a level between approximately 0.5-100.0 psi.

14. The process of Claim 13, wherein said pressure is applied for between substantially 5-45 seconds.

15. The process of Claim 13, including compressing said insulator precursor between approximately 10-95% when applying pressure.

16. The process of Claim 9, including orienting a second facing layer with said insulation insert, said first facing layer and said layer of polymer based blanket material when forming said insulator precursor.

17. A process for forming a multilayer composite insulator, comprising:

forming an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material;

closing said insulator precursor in a molding press and crimping at least one selected area of said insulator precursor;

heating said insulator precursor in said molding press to a temperature sufficiently high to soften only said polymer binding fiber in said at least one selected area of said layer of polymer based blanket material; and

opening said molding press and removing said insulator wherein said

insulator includes said at least one selected area characterized by relatively high density and relatively increased rigidity.

18. The process of Claim 17 further including cutting said first facing layer, said layer of polymer based blanket material and said insulation insert to desired dimensions prior to forming.

19. The process of Claim 17, wherein said heating of said insulator precursor is to between 200-400°F.

20. The process of Claim 17, wherein said heating of said insulator precursor is to between 300-375°F.

21. The process of Claim 17, including applying pressure to said insulator precursor in said molding press at a level between approximately 0.5-100.0 psi.

22. The process of Claim 21, wherein said pressure is applied for between substantially 5-45 seconds.

23. The process of Claim 21, including compressing said insulator precursor between approximately 10-95% when applying pressure.

24. The process of Claim 17, including orienting a second facing layer with said insulation insert, said first facing layer and said layer of polymer based blanket material when forming said insulator precursor.

34. A process for forming a multilayer composite insulator, comprising:

forming an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of a polymer based blanket material including polymer binding fibers; and

molding said insulator precursor into a desired shape by;

heating said insulator precursor;

applying pressure to said insulator precursor;

softening only those polymer binding fibers present in at least one selected area of said polymer based blanket material; and

crimping said at least one selected area.